New Biomedical HIV Interventions

WHAT ARE THE PUBLIC HEALTH ISSUES?

In 2002, it is estimated that, worldwide, 5 million adults acquired HIV infection, up from 4.3 million in 2001. In the U.S., there is continuing HIV transmission, with increasing concentration among African Americans and Hispanics, especially among women of color. These trends reinforce the importance of identifying effective new HIV prevention methods. A key effort is the development of new biomedical interventions, such as vaccines and microbicides, to prevent HIV infection.

The development of a safe and effective HIV vaccine would greatly decrease the incidence of HIV, and ultimately AIDS worldwide. However, there are many challenges to the development of an HIV vaccine. Early vaccine candidates are unlikely to be as effective as vaccines for other infectious diseases and unlikely to be effective against all HIV strains, so behavior change will remain important to prevent HIV infection. In addition, the development of safe and effective vaginal microbicides (chemical compounds that can be applied topically to inactivate HIV) would be a critical addition to HIV prevention. This is important for many women, especially in the developing world, who are at risk for HIV infection because their male sex partners may be unwilling to use condoms consistently, if at all.

WHAT HAS CDC ACCOMPLISHED?

CDC staff have conducted laboratory, clinical, and behavioral studies related to vaccines and microbicides. Current activities in HIV vaccine research focus on a large-scale vaccine efficacy trial in Thailand, and vaccine trial preparatory work in Kenya and Cote d'Ivoire, Africa. The results of the U.S. trial of the vaccine, AIDSVAX, were announced in early 2003. Although the results indicated that the vaccine was not effective in reducing the risk of HIV infection, the trial has provided critical information that will guide future research on vaccines against HIV. Currently, there are approximately 20 other vaccine candidates being developed and evaluated for safety and immune response. Several promising microbicides have also been identified at CDC in laboratory studies. CDC has participated in evaluations of microbicide safety in Thailand and Cote d'Ivoire and plans to participate in an evaluation of microbicide efficacy in Botswana.

Example of a program in action: CDC helped to evaluate AIDSVAX in the U.S. and Thailand. CDC has also helped to evaluate Carraguard™, a compound derived from seaweed, as a vaginally-applied microbicide in safety and acceptability studies in women in Thailand. A much larger study is planned in Botswana and South Africa in 2003 to assess this agent's effectiveness.

WHAT ARE THE NEXT STEPS?

CDC will continue to evaluate new tools and techniques, such as microbicides and vaccines, to prevent HIV transmission. Researchers are working with scientists worldwide to evaluate the safety and effectiveness of vaccines and microbicides that can prevent infection with HIV. Similarly, CDC works with organizations to develop linkages between communities and scientists relative to vaccine and microbicide research and the development of effective interventions.

For more information on this and other CDC programs, visit www.cdc.gov/programs. January 2003